



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/525,038

10/06/2005

Hitoshi Ohmura

OHMURA11

3241

1444 7590 02/21/2008
BROWDY AND NEIMARK, P.L.L.C.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303

EXAMINER

ARCIERO, ADAM A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

02/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/525,038	Applicant(s) OHMURA ET AL.	
	Examiner ADAM A. ARCIERO	Art Unit 4128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/06/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

1. This is the initial Office action based on the Surface treated Steel Plate for Battery Cases and Battery Case Using Same filed on 02/18/2005.
2. Claims 1-7 are currently pending and have been fully considered.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

4. The abstract of the disclosure is objected to because of a typing error. Applicant recites "A surface treated **steep** plate...and a battery case comprising the same are disclosed." The first sentence should read; "A surface treated **steel** plate...and a battery case comprising the same are disclosed." Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by SCHMIDT et al. (PCT Pub. No. WO01/27355, using the English equivalent Patent No. US 6,923,897 B1).

As to Claim 1, SCHMIDT et al. discloses a battery shell which consists of a steel cold band (col. 2, lines 56-57). Both outer and inner surfaces of said battery shell are coated with a cobalt alloy layer (claim 11) which may contain indium (col. 2, lines 49-55).

As to Claim 2, SCHMIDT et al. discloses the product of the surface treated steel sheet with an indium layer formed on one of the surfaces. Claim 2 is a product-by-process claim. “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” (*In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)). The manufacturing process steps would not impart distinctive structural characteristics to the final product (MPEP 2113). Also, SCHMIDT et al. discloses a hard metal coating of an alloy containing nickel onto a surface of a battery shell, achieved by the process of electroplating (col. 1, lines 26-33). The product of SCHMIDT et al. would inherently be the same as that produced by electrolytic plating.

As to Claim 3, SCHMIDT et al. discloses that the cobalt/indium alloy layer is formed on both surfaces of said battery shell (claim 11).

Art Unit: 4128

As to Claim 7, SCHMIDT et al. discloses the product of a battery case. Claim 7 is a product-by-process claim. “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” (*In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The manufacturing process steps would not impart distinctive structural characteristics to the final product (MPEP 2113). Also, SCHMIDT et al. discloses a cold band (battery case) which has been subjected to a deep-drawing process (col. 4, lines 20-26).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over SCHMIDT et al. (PCT Pub. No. WO01/27355, using the English equivalent Patent No. US 6,923,897 B1).

As to Claims 4 and 5, SCHMIDT et al. discloses a steel cold band wherein a cobalt alloy containing nickel (nickel alloy) (col. 2, lines 49-55) is coated onto both inner and outer surfaces (claim 11) of said steel cold band forming a surface treated steel sheet.

SCHMIDT et al. also discloses an additional layer coated onto said cobalt/nickel alloy layer that leads to a better surface conductivity of the battery shell (col. 3, lines 7-15).

Preferred materials are gold and palladium because of the reduction in contact resistance that they provide (col. 3, lines 7-11). SCHMIDT et al. does not expressly teach indium as a preferred material, along with gold and palladium, as the additional layer coated onto said nickel alloy. However, SCHMIDT et al. discloses that indium, palladium and gold are all acceptable in use for a coating for reducing said contact resistance, which in turn creates a greater surface conductivity (col. 2, lines 49-55). Therefore at the time of the invention, it would be obvious to a person having ordinary skill in the art to substitute indium for palladium or gold in the additional coating layer which is formed on the cobalt/nickel alloy layer in order to create a better surface conductivity as suggested by SCHMIDT et al. (col. 3, lines 7-10).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over SCHMIDT et al. (PCT Pub. No. WO01/27355, using the English equivalent Patent No. US 6,923,897 B1) in view of OHMURA et al. (EP 1,103,638 A1).

As to Claim 6, SCHMIDT et al. discloses a battery shell which consists of a steel cold band (col. 2, lines 56-57). Both outer and inner surfaces of said battery shell are coated with a cobalt alloy layer (claim 11) containing nickel (nickel alloy (col. 2, lines 49-55). SCHMIDT et al. also discloses an additional layer coated onto said cobalt/nickel alloy layer that leads to a battery surface conductivity of the battery shell (col. 3, lines 7-15). Preferred materials are gold and palladium because of the reduction in contact resistance that they provide (col. 3, lines 7-11). SCHMIDT et al. does not expressly teach indium as a preferred material, along with gold and palladium, as the additional layer coated onto said nickel alloy. However, SCHMIDT et al. discloses that indium, palladium and gold are all acceptable in use for a coating for reducing said contact resistance, which in turn creates a greater surface conductivity (col. 2, lines 49-55). SCHMIDT et al. does not expressly disclose a surface treated steel sheet for a battery case, wherein said steel sheet has an iron-nickel diffused layer formed as a lower layer on the inner surface of said battery shell with said nickel alloy layer representing a middle layer, and an indium layer as the outermost layer.

However, OHMURA et al. discloses a surface treated steel sheet for a battery container (pg. 3, [0019]) and the formation of a nickel-iron diffusion layer from a nickel plating layer by a heat treatment after plating (pg. 3, [0023]). OHMURA et al. also discloses that a nickel or nickel-alloy plating layer be formed on top of said diffusion layer. At the time of the invention, a person having ordinary skill in the art would have been motivated to apply a nickel-iron diffusion layer and a nickel or nickel-alloy plating layer formed on top of said diffusion layer as the lower layers on the inner surface of the battery shell of

Art Unit: 4128

SCHMIDT et al. in order to further prevent the peeling-off of the nickel plating layer from a steel substrate, as suggested by OHMURA et al. (pg. 3, [0023]).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam A. Arciero whose telephone number is 571-270-5116. The examiner can normally be reached on Monday through Thursday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara L. Gilliam can be reached on 571-272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

/Barbara L. Gilliam/

Supervisory Patent Examiner, Art Unit 4128